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EXAMINER,

GOSSAGE, GLENN A

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/006,293	<b>Applicant(s)</b> KAVANAGH, THOMAS	
	<b>Examiner</b> Glenn Gossage	<b>Art Unit</b> 2187	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-15 is/are allowed.
- 6) ☒ Claim(s) 1-3, 12, 16 and 24-29 is/are rejected.
- 7) ☒ Claim(s) 4-11 and 17-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

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1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. It appears "MANAGEMENT OF MEMORY" should be changed to --SYSTEM AND METHOD OF MEMORY MANAGEMENT-- for clarity and completeness (note claims 1 and 16, line 1, e.g.). The loss in brevity of title is more than offset by the gain in its informative value in indexing, classifying, searching, etc. See MPEP 606 and 606.01.
  
2. The abstract of the disclosure is objected to because it does not enable one to quickly determine from a cursory inspection the nature and gist of the technical disclosure as required by 37 CFR 1.72(b). It appears in line 1, "Embodiments of a memory management system" should be changed to --A memory management system, method and computer readable medium--, and in line 6 (page line 11), - - , cold or warm, -- should be inserted after "reboot," for completeness (see claim 16, line 1; claim 25, lines 7-8 and claim 28, e.g., as well as claims 10 and 22). Also, in line 4, --reboot persistent-- should be inserted before "memory" for consistency (note lines 3 and 8, e.g.). In line 5, it appears "the one" should be simply --one-- for clarity. In lines 5 and 8, --circuit-- should be inserted before "card" for consistency (note lines 1-2). In line 8 (page line 13), it appears "the" should be --an-- for clarity \*to avoid possible antecedent problems, e.g.).

Appropriate correction is required. See MPEP § 608.01(b).

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3. The drawings are objected to because in Figure 3, "Perisistence" (above reference numeral 127) should be changed to --Persistence Memory-- for clarity and consistency. The label "Cold Reboot Persistence Memory" (above reference numeral 125) should be moved slightly to the right so that the word "Persistence" is clearer. Also, within "box" 121, it appears "Restart" should be --Reboot-- for consistency (see paragraph [0041], line 2).

In Figure 10, it appears the reference numeral 144' for module card 120B should be labeled --144"-- (see paragraph [0066], line 3 of the specification, e.g.). Also, it is not entirely clear whether reference numeral 196 for the communication link from module card 120A should be changed to --194-- (see paragraph [0069], line 7, but also see paragraph [0071], line 3).

Applicant is REQUIRED to submit a proposed drawing correction in response to this Office action. However, actual formal correction of the noted defect(s) (submission of corrected formal drawings, e.g.) can be deferred until the application is allowed by the examiner.

Also note MPEP 608.02(r) and (v).

4. The disclosure has not been checked by the Examiner to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the disclosure. The following objections are specifically noted:

**In the specification:**

In paragraph [0009], at line 3 of the paragraph, it appears "it" should be --the application-- for clarity. See also paragraph [0010], line 2.

In paragraph [0010], at line 2 of the paragraph, it appears "in by event of" should be changed to --in the event of-- for clarity.

In paragraph [0028], at line 1 of the paragraph, it appears "1200" should be deleted.

In paragraph [0032], at line 4 of the paragraph, it appears "at" should be deleted.

In paragraph [0034], at line 5 of the paragraph, ", the" should be --, and the-- for clarity.

In paragraph [0038], at lines 1-2 of the paragraph, it appears "an embodiment of a" should be simply --another-- for clarity. In line 6, it appears "other" should be deleted. In line 8, it appears --on the transport complex-- should be inserted after "module" for clarity.

In paragraph [0040], at line 3 of the paragraph, and throughout the specification, the first occurrence of all acronyms or abbreviations should be written out for clarity, whether or not they may be considered "well known." Accordingly, "I/O" should be --input/output (I/O)--.

In paragraph [0041], at line 2 of the paragraph, it appears the reference numerals 121 and 138 should be moved after "application" for clarity. Similarly, in line 8, it appears 127 should be moved after "memory" (first occurrence) for clarity and consistency (note page 10, line 1, e.g.). Also, it appears --(RAM)-- should be inserted after "memory" (second occurrence) for clarity.

In paragraph [0042], at line 5 of the paragraph (page 10, line 2), --persistence-- should be inserted before "memory" (first occurrence) for consistency. In lines 8-11, the reference numerals 335, 337, 342 and 344 should be moved after "region" for clarity. See also paragraph [0054], at lines 8-9, 15 and 16, and paragraph [0073], at lines 9, 11, 1216, 18 and 19, by way of example only.

In paragraph [0046], at line 3 of the paragraph, it appears "mediums" should be --media--. In line 5, it appears "is" should be --will be-- (note line 7, e.g.).

In paragraph [0047], at line 2 of the paragraph, it appears "127" (both occurrences) should be deleted, and --127-- inserted after "memory" in line 1 of the paragraph, for clarity and consistency.

In paragraph [0048], at line 4 of the paragraph, it appears "identifier," should be changed to --identifier, including an endpoint identifier (ID), object ID and data key, as well as-- for clarity and consistency (when read in conjunction with Fig. 4B, e.g.). See also paragraph [0049], at line 4 (noting Fig. 4C).

In paragraph [0052], at line 6 of the paragraph, the wording "sends 502" is awkward and unclear. It appears "sends 502" should be changed to --sends, in step or block 502,-- or other similar language for clarity and consistency. [Otherwise, "502" should be deleted, and --(step or block 502)-- inserted after "138" in line 7 of the paragraph (page 14, line 1), for clarity.] The wording "receives 504 the message," "determines 506 whether," "associates 514 the," etc. (see page 14, lines 4, 6 and 9, e.g.) is similar unclear and confusing. The reference numerals for the different steps in the method on page 14, lines 4, 6, 8,

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9, 11, 17 and 20 and throughout the remainder of the specification should be similarly amended for clarity and consistency. See page 15, lines 8, 9, 12, 13 and 14; page 16, lines 5, 11 and 12; page 17, lines 3, 4, 6, 14, 15, 16 and 19; and page 18, lines 4, 10 and 12, by way of example only.

In paragraph [0054], at line 10 of the paragraph, it appears "on" should be -for-.

In paragraph [0055], at line 1 of the paragraph, it appears --700-- should be inserted after "method" (see Fig. 7A).

In paragraph [0058], at line 1 of the paragraph, "an" should be --a--.

On page 18, line 16, it appears a period is missing.

In paragraph [0059], at line 7 of the paragraph, --non-volatile-- should be inserted before "cold" for consistency (note Fig. 8B, e.g.). See also page 24, line 20 (noting Fig. 11).

In paragraph [0066], at line 1 of the paragraph, --card-- should be inserted after "module" for consistency.

In paragraph [0071], at line 6 of the paragraph, it appears --(step 909, Fig. 9)-- should be inserted after "1" for clarity.

In paragraph [0072], at line 6 of the paragraph, --persistence-- should be inserted before "memory" for consistency.

Again note that these are merely exemplary. The entire specification should be carefully and completely reviewed to ensure that all possible errors are located and corrected.

**In the claims:**

In claim 2, line 2, it appears "application wherein" should be --application, wherein-- for clarity.

In claim 5, lines 7 and 8, the wording "marking ... as being marked" is somewhat awkward and confusing. It appears "marked" (second occurrence) in lines 7 and 8 should be deleted for clarity.

In claim 6, line 1, "memory manager" should be --system-- for consistency (see claims 1 and 4, line 1). The wording "The memory manager (system) of claim 4 further performs" is unclear. It appears "further performs" should be changed to -- , wherein the memory manager stores-- for clarity and consistency (see claims 2-5, line 1).

In claim 7, line 6, --memory-- should be inserted before "region" (both occurrences) for clarity and consistency (see lines 1 and 4). See also claim 8, lines 2, 4 and 5 (noting claim 7, line 2 and claim 8, line 3), as well as claim 11, lines 8 and 9, claim 18, lines 8 (two occurrences) and 9, and claim 19, lines 5 and 6, by way of example only. In line 7, --of data-- should be inserted after "set" for clarity and consistency (note line 6). See also claim 20, line 6.

In claim 8, line 1, the language "The memory manager module of claim 7 further performing" is unclear analogous to claim 6. It appears "memory manager module further performing" should be changed to --system of claim 7, wherein the memory manager further performs-- for clarity and consistency. In line 6, " , the set" should be deleted for clarity.



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In claim 10, line 4, it appears --the-- should be inserted before "cold" for clarity (to avoid possible antecedent problems, e.g.). Note claim 9, lines 1-2 and claim 10, line 5. See also claim 22, line 3.

In claim 11, line 1, the language "the memory is a memory having" is awkward and confusing. It appears "is a memory having" should be changed to simply --has-- for clarity and consistency (see claim 7, line 1, e.g.). In line 3, "a set" should be --the set-- for clarity (to avoid possible antecedent problems, e.g. Note lines 5-6 and also see claim 1, lines 1-2.). In line 9, it appears "the" (first occurrence) should be deleted for clarity (to avoid possible antecedent problems, e.g.). Similarly, it appears "a stored" should be --the stored-- for clarity.

In claim 12, line 1, "circuit card" should be changed to --system-- for clarity and consistency analogous to claims 6 and 8.

In claim 13, lines 7 and 13 (first occurrence), as well as claim 15, line 2, --software-- should be inserted before "application" for consistency (see lines 2 and 5, e.g.). In lines 8, 11, 12, 13, 15 and 16, as well as claim 14, line 2, --circuit-- should be inserted before "card" for consistency (see lines 2, 3, 4 and 6, e.g.). See also claim 19, line 3 and corresponding parts of claims 25 and 26. In line 13, "application in" should be --application, in-- for clarity. In line 13, it appears "memory of" should be --memory on-- for consistency (see claim 13, line 2, e.g.). In line 15, "comprising" appears to read more clearly here as --including--.

In claim 15, line 1, it appears "13" should be --14-- for clarity (note the use of "further comprises" and see claim 14, line 1).

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In claim 16, line 1, it appears --over a reboot-- should be inserted before "storage" for clarity and consistency (see line 4, as well as claims 1, 13 and 25, line 1, e.g.).

Claim 23 is objected to analogous to claim 11, which uses similar language.

In claim 25, line 14, it appears "of" (first occurrence) should be deleted for clarity.

In claim 27, line 1, it appears "25" should be --26-- for clarity analogous to claim 15.

In claim 29, line 1, it appears "usable" should be --readable--.

Appropriate correction is required.

5. Claims 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, and therefore its dependent claims, the proper antecedent for terms such as "the memory," "the set of data" and "first (second) (circuit) card" are somewhat unclear since there is more than one "memory," "set of data" and "first (second) circuit card" set forth in the claim (see the "memory" in lines 2 and 6, as well as line 9, e.g. and note line 7 referring to "the memory." See also the "set of data" in lines 1-2 and 8 (and note lines 11, 12 and 14 referring to "the set of data"), and the "first circuit card" in lines 2 and 9, noting lines 11 and 12). The following changes are suggested:

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In claim 25, line 2, it appears "executable" should be --executing-- for consistency (note line 8, e.g.). In line 4, it appears "a software" should be simply --the-- for clarity (to avoid possible antecedent problems, e.g.). In line 7, it appears --on that card-- should be inserted after "memory" to avoid possible antecedent problems (note the "memory" in lines 2 and 6, e.g.). In line 8, it appears "a" (second occurrence) and "an" should be changed to --the-- for clarity (to avoid possible antecedent problems, e.g.). Similarly, in line 9, it appears "a" (all occurrences) should be changed to --the-- for clarity.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-3, 16, 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Madany et al.

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With respect to claims 1, 28 and 29, as well as claim 16, Madany et al discloses a system of memory management for persistent storage over a reboot of a set of data, the system including a storage "means" such as a memory (see memory 62 in Figure 4, e.g.) for persistent storage of data over a reboot (Madany teaches that data is "persistently" stored or saved after a reboot. See column 9, lines 15-18 and 47-50, e.g.), and a "means" such as a memory manager for directly controlling access to the memory (see memory manager in Figure 7 and column 7, lines 4-6, e.g.).

Madany et al further discloses that the data which is persistent over a reboot may include networking and graphics code, images, help files, etc. (see column 6, line 67 to column 7, line 4, e.g.), and that the teachings may be applied to any type of device receiving information or data from a source and may be applied to any situation where it is desirable to minimize rebooting or initialization time (column 3, lines 28-36 and column 9, lines 36-41, e.g.). As those of ordinary skill in the art would appreciate, the components forming the network computer or node, such as the processor which executes applications and the "persistent" memory, are coupled together on a "mother" board or card, or a "daughter" board or card, in a well known manner, and thus the memory and memory manager may be considered to be "on" the circuit card (see Figure 2, as well as column 5, lines 55-58, e.g.). In a similar manner, the utilities, routines or applications which generate data may also thus be considered to be executing "on" the circuit card. Note that the computer or "node" is capable of receiving application programs and data from another "node" in addition to data generated at or "on"

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the node (see column 4, lines 21-23 and 34-37 and column 4, line 66 to column 5, line 3; column 5, lines 31-37 and 59-67; and column 6, lines 5-10 and 42-48, e.g.).

Also with respect to claim 28, Madany et al teaches that the method of memory management may be implemented using a computer “usable” medium including instructions embodied thereon which, when executed by a processor, cause the processor to implement the system and perform the method (see column 9, lines 58-65, e.g.).

As per claims 2 and 3, as well as claim 16, the memory manager in Mandany et al allocates memory based on a request for storage of data from an application in a well known manner, and also discusses the use of program or application identifiers during the rebooting process (see column 5, lines 54-58; column 7, lines 4-6 and column 8, lines 26-34, e.g.). The stored persistent data must be associated with some application so that the data may be subsequently retrieved and restored after the warm reboot (otherwise random data would be stored with no association to an application). The data to be stored in the is transferred and space allocated by the memory manager so that the transferred data can be considered to be a part of the “request” for storage of the data (note column 7, lines 4-8, e.g.).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject

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matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Madany et al.

With respect to claims 12 and 24, Madany et al discloses a system of memory management for persistent storage over a reboot of a set of data as in the present invention, the system including a memory for persistent storage of data over a reboot, and a memory manager for directly controlling access to the memory (see numbered paragraph 6 above, e.g.). Madany et al also teaches that the system may be used in a networked system having a plurality of computers or "nodes." While Madany et al does not explicitly state that the system and method for persistent storage of data over a reboot can be used in a node having an optical element, Madany et al does teach that the teachings may be applied to any type of device receiving information or data from a source and may be applied to any situation where it is desirable to minimize rebooting or initialization time (column 3, lines 28-36 and column 9, lines 36-41, e.g.), and the use of such a system or method in conjunction with a well known node having optical elements, i.e. an "optical node" (see paragraph [0032], lines 3-11 of the present specification, e.g.), in order to reduce booting time and decrease network traffic, would have been readily obvious to one of ordinary skill in the art at the time the claimed invention was made.

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8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chaiken et al is cited as disclosing a system and method for persistent storage of data in a system having a plurality of nodes similar to the present invention.

Drews is cited as disclosing a system including a memory for storing persistent data as in the present invention.

Farrand et al is cited as disclosing a system and method with both hard (or "cold") and soft (or "warm") reboot capabilities.

9. Claims 4-11 and 17-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 25-27 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2<sup>nd</sup> paragraph, set forth in this Office action.

Claims 13-15 are allowed over the prior art of record.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Gossage whose telephone number is (703) 305-3820.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (703) 308-1756.

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The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238

(After Final Communications)

(703) 746-7239

(Official Communications)

(703) 746-5713

(Use this FAX number only after approval by the Examiner, for INFORMAL or DRAFT communications.)



GLENN GOSSAGE  
PRIMARY EXAMINER  
ART UNIT 2187